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### **1** Detecting dynamic occlusion in front of static backgrounds for AR scenes 43%



Jan Fischer , Holger Regenbrecht , Gregory Baratoff

**Proceedings of the workshop on Virtual environments 2003** May 2003

Correctly finding and handling occlusion between virtual and real objects in an Augmented Reality scene is essential for achieving visual realism. Here, we present an approach for detecting occlusion of virtual parts of the scene by natural occluders. Our algorithm is based on a graphical model of static backgrounds in the natural surroundings, which has to be acquired beforehand. The design of the approach aims at providing real-time performance and an easy integration into existing AR systems.

...

### **2** Tracking: Tracking based structure and motion recovery for augmented 41%



video productions

Kurt Cornelis , Marc Pollefeys , Luc Van Gool

**Proceedings of the ACM symposium on Virtual reality software and technology**

November 2001

Augmented Reality (AR) can hardly be called uncharted territory. Much research in this area revealed solutions to the three most prominent challenges of AR: accurate camera state retrieval, resolving occlusions between real and virtual objects and extraction of environment illumination distribution. Solving these three challenges improves the illusion of virtual entities belonging to our reality. This paper demonstrates an elaborated framework that recovers accurate camera states from a video se ...

### **3** Hybrid VR: Placing three-dimensional models in an uncalibrated single 40%



image of an architectural scene

Sara Keren , Ilan Shimshoni , Ayellet Tal

**Proceedings of the ACM symposium on Virtual reality software and technology**

November 2002

This paper discusses the problem of inserting three-dimensional models into a single image. The main focus of the paper is on the accurate recovery of the camera's parameters, so that 3D models can be inserted in the "correct" position and orientation. An important aspect of this paper is a theoretical and an experimental analysis of the errors. We also implemented a system which "plants" virtual 3D objects in the image, and tested the system on many indoor augmented reality scenes. Our analysis ...

**4 A palmtop display for dextrous manipulation with haptic sensation** 40%



Haruo Noma , Tsutomu Miyasato , Fumio Kishino

**Proceedings of the SIGCHI conference on Human factors in computing systems: common ground** April 1996

**5 Technologies for augmented reality systems: realizing ultrasound-guided 40%  
needle biopsies**



Andrei State , Mark A. Livingston , William F. Garrett , Gentaro Hirota , Mary C. Whitton , Etta D. Pisano , Henry Fuchs

**Proceedings of the 23rd annual conference on Computer graphics and interactive techniques** August 1996

**6 Virtual objects in the real world** 40%



Daniel G. Aliaga

**Communications of the ACM** March 1997  
Volume 40 Issue 3

**7 Resolving occlusion in augmented reality** 40%



Matthias M. Wloka , Brian G. Anderson

**Proceedings of the 1995 symposium on Interactive 3D graphics** April 1995

Current state-of-the-art augmented reality systems simply overlay computer-generated visuals on the real-world imagery, for example via video or optical see-through displays. However, overlays are not effective when displaying data in three dimensions, since occlusion between the real and computer-generated objects is not addressed. We present a video see-through augmented reality system capable of resolving occlusion between real and computer-generated objects. The heart of our S ...

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